

ZACH ELEMENTARY SCHOOL

# POUDRE SCHOOL DISTRICT ZACH ELEMENTARY SCHOOL

## FACILITY CONDITION ASSESSMENT

FORT COLLINS, CO

OCTOBER 2023



**Together, Building a Thriving Planet**

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# Table of Contents

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<b>KEY CONTACT INFORMATION.....</b>	<b>2</b>
<b>EXECUTIVE SUMMARY.....</b>	<b>3</b>
<b>SCOPE AND APPROACH.....</b>	<b>7</b>
Scope of work.....	8
Ratings, Methods and Scoring.....	9
Cost Estimating.....	12
<b>CONDITION ASSESSMENT.....</b>	<b>14</b>
Systems Description - Zach ES.....	15
Priorities.....	16
3-, 5-, 10-Year Plans.....	19
<b>APPENDICES.....</b>	<b>24</b>
Appendix A: 3-Year Plan Assets List.....	A
Appendix B: 5-Year Plan Assets List.....	B
Appendix C: 10-Year Plan Assets List.....	C

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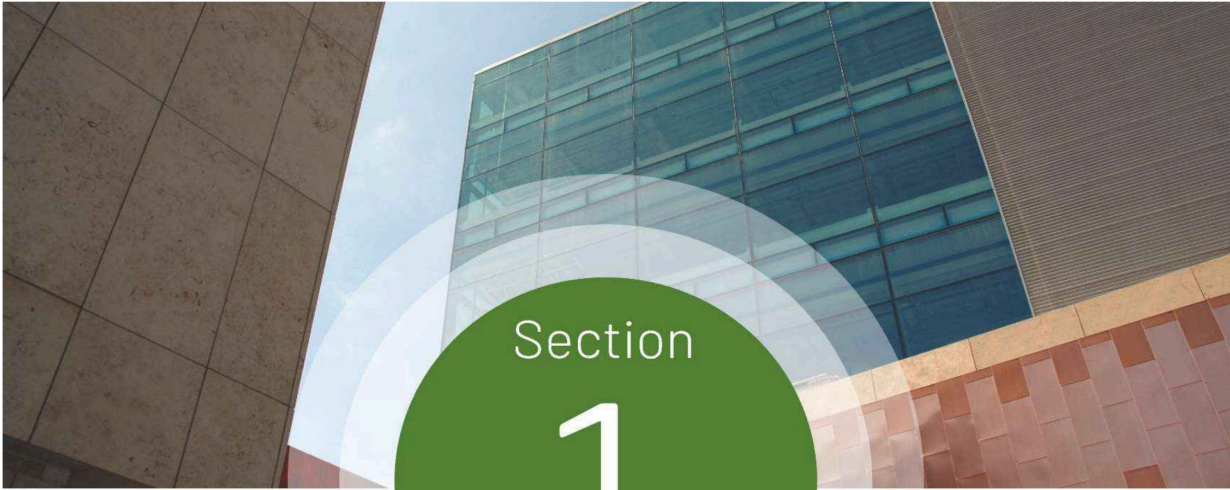
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Section

1

# Executive Summary

# Executive Summary

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## Project Goals

The contents of this report present the results of the Facility Condition Assessment (FCA) performed at Zach ES within the Poudre School District (PSD) on June 14, 2023. PSD intends to utilize the findings of this report to inform both capital and operating budgets, prioritize maintenance efforts, and optimize planning processes as replacements and upgrades of assets and facility systems become necessary in the future.

## Facility List

The scope of the FCA project included the assessment of the following campus.

FACILITY NAME	AREA (SF)	YEAR(S) BUILT
ZACH ES	63,092	2002
<b>TOTAL</b>	<b>63,092</b>	

## Facility Summary

### Zach ES

Zach ES is located at 3715 Kechter Rd., Fort Collins, CO 80528. This 63,092 SF facility consists of two levels and was initially constructed in 2002. The equity index for this school is 0.41.



*Zach ES*

# Executive Summary

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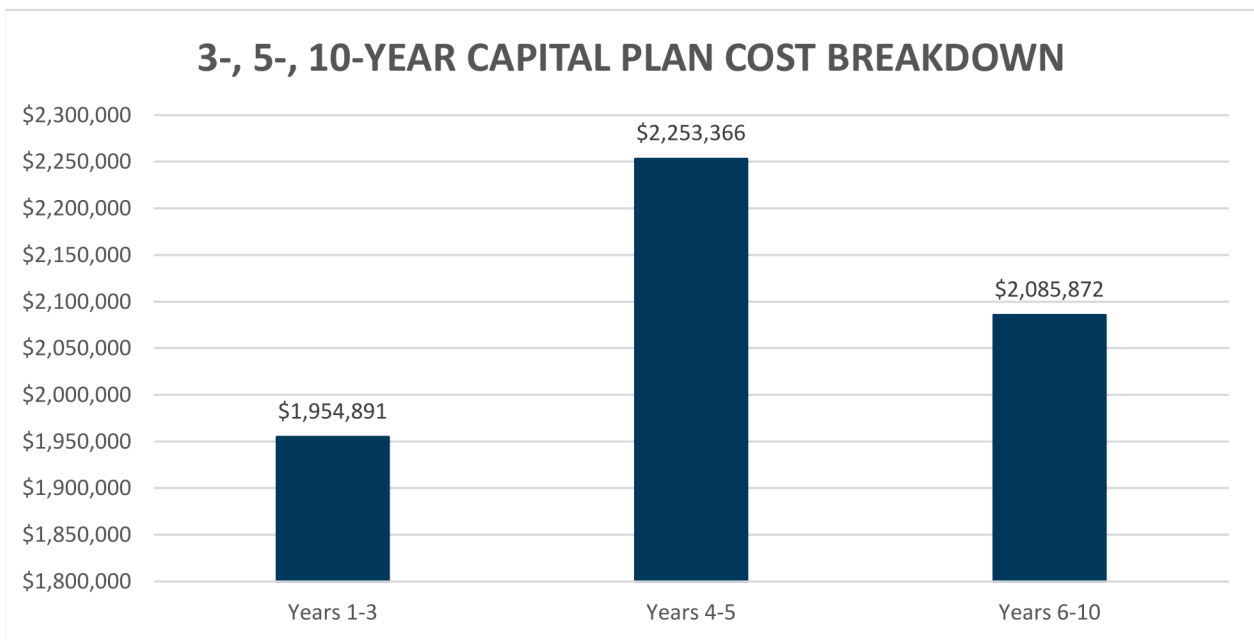
## Assessment Summary

This section summarizes the building systems at the facility and describes the general condition observed based on the assessment performed on June 14, 2023. Additional details, findings and recommendations are presented in Section 3 of this report.

## Capital Plan Summary

The estimated replacement costs for equipment expected to fail within the next ten years are shown below, divided into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the cost for replacement of equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment.

Replacement costs include 3% inflation year over year.



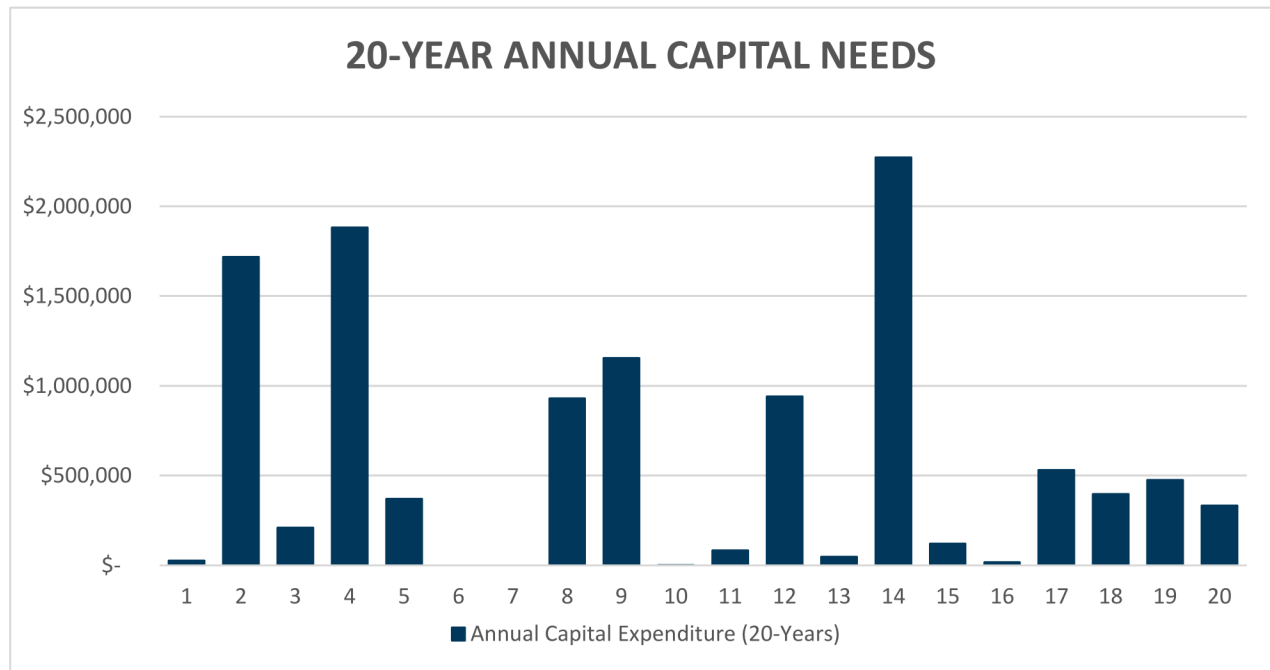
**3-, 5-, 10-Year Capital Plan Cost Breakdown**

# Executive Summary

## Annual Capital Expenditure (20 Years)

20-Year Annual Capital Needs and 20-Year Annual Capital Expenditure by Subsystem below indicate the estimated replacement costs for equipment expected to fail within the next twenty years, and are displayed both by year and by subsystem.

Replacement costs include 3% inflation year over year.



**Annual Capital Expenditure by Year**

Replacement costs associated with the Annual Capital Expenditure graph and table include values that are adjusted for inflation.

**20-Year Annual Capital Expenditure by Subsystem**

Subsystem	Years 1-5	Years 6-10	Years 11-15	Years 15-20
B20 - Enclosure	\$0	\$272,989	\$0	\$0
B30 - Roofing	\$356,730	\$0	\$16,403	\$427,831
C10 - Int. Construction	\$0	\$0	\$0	\$0
C20 - Stairs	\$0	\$0	\$0	\$0
C30 - Interior Finishes	\$972,822	\$0	\$1,805,378	\$87,216
D10 - Conveying	\$0	\$0	\$118,114	\$0
D20 - Plumbing	\$158,675	\$1,566	\$87,958	\$12,031
D30 - HVAC	\$1,440,104	\$0	\$1,031,641	\$443,029
D40 - Fire Suppression	\$0	\$881,545	\$0	\$0
D50 - Electrical	\$1,278,254	\$900,108	\$405,785	\$779,848
E10 - Equipment	\$0	\$29,665	\$0	\$0
<b>Total:</b>	<b>\$2,877,034</b>	<b>\$1,812,883</b>	<b>\$1,643,499</b>	<b>\$1,234,909</b>

Section

2

# Approach and Methodology



# Scope and Approach

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## Scope and Approach

### SCOPE OF WORK

The scope of this facility condition assessment includes all major mechanical, electrical, and plumbing equipment, and commercial refrigeration equipment. In addition, the building enclosure, roofing, interior construction and finishes, and fire suppression systems are included within the assessment. Turf, site assets, kitchen assets besides walk-in freezers, exhaust fans and kitchen make up air units are not included in scope.

The following table lists the general asset types included within the scope of this assessment. Also shown is the corresponding Uniformat code, which has been used to catalog equipment based on type and intended use.

*UniFormat Classification of Building Systems*

UNIFORMAT CODE	CATEGORY DESCRIPTION
B20	Exterior Enclosure (i.e. windows, walls, doors)
B30	Roofing (i.e. roofing covering, skylights, etc.)
C10	Interior Construction (i.e. doors, walls)
C20	Interior Stairs (i.e. stair construction)
C30	Interior Finishes (i.e. flooring, ceiling finishes, etc.)
D10	Conveying (i.e., elevators)
D20	Plumbing (i.e., water heating, pumps, compressors)
D30	Heating, Ventilation, and Air Conditioning
D40	Fire Suppression Systems
D50	Electrical (panelboards, transformers, switchgear)
E10	Equipment, Kitchen Hoods, Walk-in Units, etc.

# Scope and Approach

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## RATINGS, METHODS AND SCORING

To allow Poudre School District more flexibility in prioritizing capital planning efforts, McKinstry has developed the following metrics which assign various scores to each asset.

### Asset Condition

Condition ratings are presented for each asset as a score of 1 – 5. Scores are based upon a visual inspection during the building evaluation period. A score of 1 signifies that the asset is in great, “like new” condition. A score of 2 indicates that the asset is in good condition. A score of 3 signifies that the asset is in expected “average” condition based on function and the age of the asset. A score of 4 signifies that the asset is in poor condition, in need of repair, and will require replacement in the near future. A score of 5 signifies that the asset is in very poor or failed condition and in need of imminent replacement.

SCORE	CONDITION ASSESSMENT
1	Asset is in great condition, no action required.
2	Asset is in good condition, regular maintenance expected.
3	Asset is in expected condition, regular replacement/maintenance expected.
4	Asset is in poor condition, maintenance/replacement recommended soon.
5	Asset is in very poor condition, urgent replacement needed.

### Student/Teacher Impact

Student/Teacher Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers educational (student and/or teacher) impact caused if the equipment were to fail. Assets serving classrooms and other educational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. A student/teacher impact score of 1 indicates that there is little to no impact to educational activities.

SCORE	STUDENT/TEACHER IMPACT
1	Failure poses no significant educational impact.
2	Failure poses low educational impact.
3	Failure poses moderate impact. Asset serves teaching area, but has backup.
4	Failure poses high educational impact.
5	Failure poses severe impact. Asset serves teaching area and has no backup.

### Energy Cost Impact

The Energy Impact score is presented for each asset on a scale of 1-5 (low to high impact). Each of the asset types within the scope of this assessment were evaluated based on their impact to energy cost and consumption (including electrical, natural gas, and liquid fuels). Assets with a higher Energy Cost Impact score indicate that the asset has a large contribution to the overall energy costs of the facility. A sample of Energy impact scores is shown below:

# Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Air Handling Unit	less than 10,000 CFM	3
	between 10,000 CFM – 50,000 CFM	4
	greater than 50,000 CFM	5
Chiller	less than 200 tons	3
	between 200 – 500 tons	4
	greater than 500 tons	5
Computer Room AC Condensing Unit Heat Pump	less than 10 tons	2
	greater than 10 tons	3
Cooling Tower	less than 200 tons of rejection	2
	greater than 200 tons of rejection	3
Dust Collector	less than 5 HP	2
	between 5 HP and 25 HP	3
	greater than 25 HP	4
Exhaust Fan	less than 5000 CFM	2
	greater than 5000 CFM	3
Fan Coil Unit	greater than 3000 CFM	2
Fuel Fired Boiler	less than 200 MBH	2
	between 200 – 1000 MBH	3
	between 1000 – 2000 MBH	4
	greater than 2000 MBH	5
Furnace	less than 100 MBH	2
	between 100 and 500 MBH	3
	greater than 500 MBH	4
Generator	less than 500 KW	2
	greater than 500 KW	3
Lighting, Exterior	LED	2
	Fluorescent	3
	HID/Incandescent	4
Lighting, Interior	LED	2
	Fluorescent	4
	HID/Incandescent	5
Make-Up Air Unit	less than 5,000 CFM	3
	between 5,000 and 25,000 CFM	4
	greater than 25,000 CFM	5
Pumps	less than 25 HP	2
	between 25 -150 HP*	3
	greater than 150 HP*	4
Return Fan Supply Fan	less than 20 HP	2
	greater than 20 HP*	3

# Scope and Approach

ASSET TYPE	ASSET SIZE	ENERGY COST IMPACT (1-5)
Rooftop Unit	less than 5 ton	2
	between 5 and 20 tons	3
	between 20 and 50 tons	4
	greater than 50 tons	5
Transformer	greater than 200 kVA	2
VFD	greater than 50 HP	2
Air Compressor	All sizes	2
Air Curtain		
Air Dryer		
Cabinet Unit Heater		
Dehumidifier		
Electric Duct Heater		
Humidifier		
Unit Heater		
Unit Ventilator		
Walk-In Condenser		
Walk-In Unit		
All Other		

\*Add 1 for direct drive motors

## Operational Impact

Operational Impact scores are presented for each asset on a scale of 1 – 5 (low to high impact). This metric considers the operational impact caused if the equipment were to fail. Assets serving critical administrative and district operational spaces are assigned scores of 2-5 depending on the impact the failure of an asset would have and if backups are available. An operational impact score of 1 indicates that there is little to no impact to administrative or operational activities.

SCORE	OPERATIONAL COST IMPACT SCORE
1	Asset has little to no operational impact.
2	Asset has a low level of operational impact.
3	Asset has a moderate operational impact.
4	Asset has a high level of operational impact.
5	Asset has severe operational impact.

## Industry Life Expectancy

The designed life expectancy for a given asset is determined using a combination of widely accepted industry standards including ASHRAE and BOMA, as well as a manufacturers’ database of equipment life expectancies. This value is expressed in number of years.

# Scope and Approach

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## Observed Remaining Life

The Observed Remaining Life is also expressed in number of years and takes into consideration the function and operating environment of the asset, as well as a determination based upon a visual inspection of the asset. The Observed Remaining Life value may vary from the Design Life value. For example, a secondary heat exchanger that has been well maintained may have an Observed Remaining Life that is greater than the expected Design Life. Likewise, a primary chilled water pump that has not been well maintained, and shows visual signs of premature wear and tear, may have an Observed Remaining Life that is less than the expected Design Life.

## Cost Estimating

Based on the constraints of the scope outlined in the contract we have based our asset pricing upon industry standards, RSMeans, and pricing data sourced through McKinstry's construction division. This information is intended to assist in the prioritization and resource allocation associated with maintenance and capital replacement projects. Cost estimates are determined using specific characteristics of each asset (tonnage, motor size, capacity, etc.) along with one of several cost information data sets. Standard equipment warranties are included.

To clarify, all Estimated Replacement Costs include averages of the material cost of the asset, the demolition and installation of that asset type and are expressed in 2023 dollars. Additionally, site specific construction and equipment invoices have been utilized as available.

Costs associated with project design, contractor competence, commissioning, test and balance services and are excluded from the estimate and are the responsibility of the Client. McKinstry assumed a 3% inflation, applied year over year. All work is during normal business hours. For mechanical equipment any duct work, piping, existing appurtenances are to be reused; costs to repair or replace any lines going to or coming from the units is excluded. Existing isolation valves to be used; repair or replacement of isolation valves is excluded.

Costs typically associated with project-specific parameters are excluded and should be added at the discretion of the Client. Such exclusions include risks or contingencies such as asbestos abatement, other hazardous waste abatement, scope changes, design changes, taxes, special wage requirements such as Prevailing Wage rates, warranty management and unknown site conditions. Overtime and after-hours work is excluded. Any necessary structural or electrical upgrades to replace equipment is excluded. Incidental code violations resulting from project scope or execution are excluded. Correction of any existing code violations are excluded. Temporary heating, cooling, ventilation, and power during construction and the warranty period are excluded. Moving of heavy equipment or furniture to complete the work is excluded. Running and terminating new IP drops for equipment is excluded. Any changes to fire and life safety systems for mechanical equipment upgrades is excluded.

## Data-Driven Maintenance Approach

Included with the submission of this report is the FCA Data Collection Workbook, which includes all data collected for each asset. The Workbook can be used to quickly sort through equipment and prioritize maintenance and replacement efforts. Additional observations and equipment details are provided within the workbook for each asset.

# Scope and Approach

Each asset is classified according to building system, size, capacity, and other standards, as well as ratings of current condition and impact of failure. Such organization and classification facilitate searching and sorting the data for maintenance and replacement priorities. As mentioned, the impact ratings help to compare one asset to another. Based on observed condition and impact scores, the future maintenance priorities for each building are described further in later sections.

As each of the components identified in the workbook is repaired or replaced, the information can be revised to reflect the new conditions. Remaining useful life values can also be manually iterated one year from the assessment date to reflect fewer remaining years of life. Assets no longer in service can be removed from the list. Similarly, assets that have been newly installed can be added to the list. Following the impact guidelines, relative priority can be calculated for these assets.

## Equity Index

As an additional metric to the six existing areas of the Facilities Condition Assessment, Poudre School District has created an Equity Index to assist in prioritizing facilities improvement projects. This number takes into account student poverty, students qualifying for ELA services, students qualifying for Special Education services, and students who are homeless. The calculated score for each school is based on these factors and where it falls in relation to the district average. The formula would be:

$$\frac{\text{School Percentage in these areas added together as decimals}}{\text{District Percentages in these areas added together as decimals}}$$

In this formula, a school with student needs equal to the district average would have an equity index of 1.0. Schools with student needs higher than the district average would have an Equity Index greater than 1.0. Schools with student needs less than the district average would have an Equity Index less than 1.0.

Category	Equity Index
Low	0.29
High	3.20
Average	1.11
Median	0.95

The equity index for Zach ES is 0.41.

Sample Calculation:

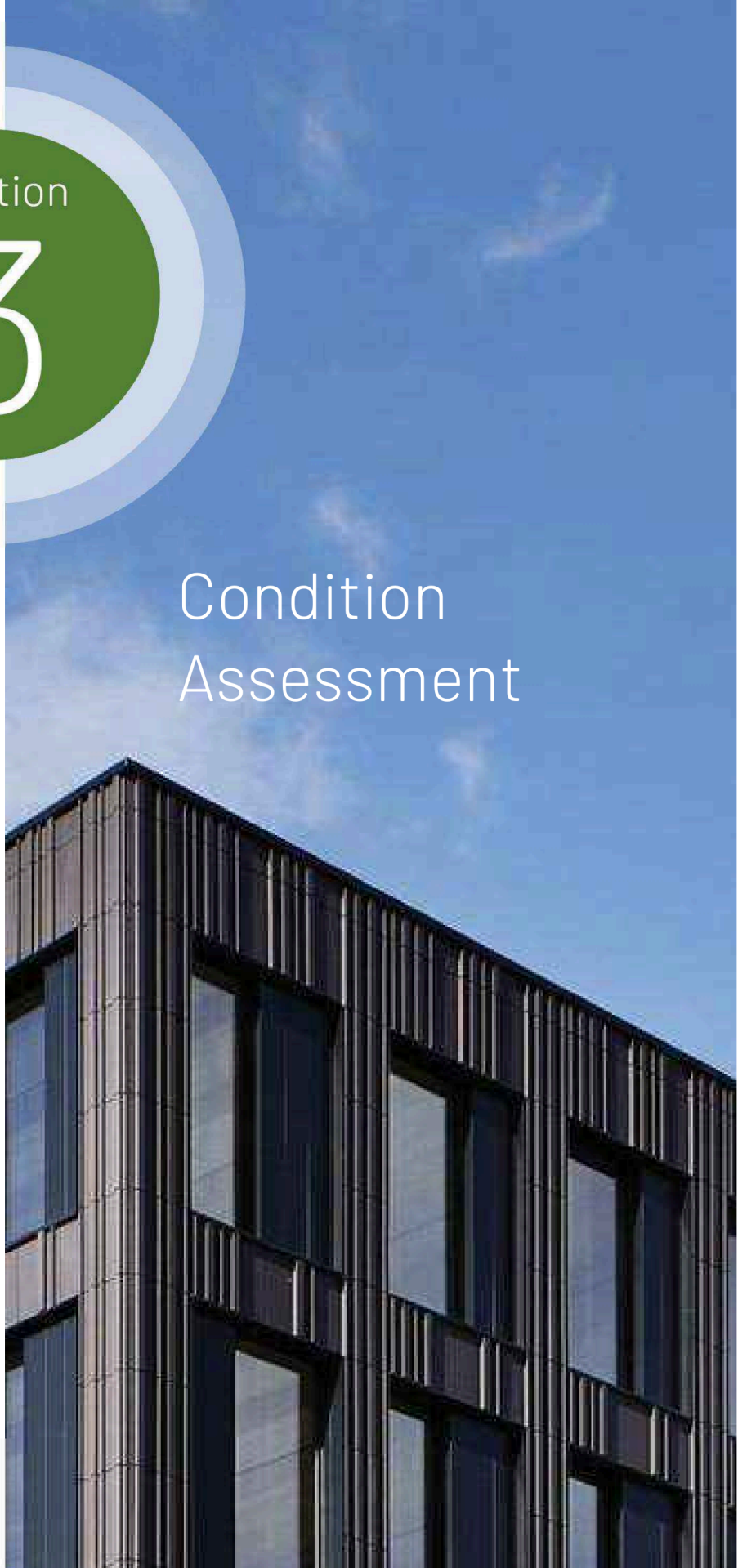
School Name	School Population K-12 Total	F/R	ELL	SPED	McKinney-Vento	Total of Previous Columns	Equity Index Number = school average / district average
Sample	381	15.20%	0.00%	8.40%	0.00%	0.24	0.24/0.48 = 0.49
<b>Grand PSD Total - Oct 2022 Count</b>	<b>26,163</b>	<b>29.5%</b>	<b>5.8%</b>	<b>9.5%</b>	<b>3.4%</b>	<b>0.48</b>	

F/R - Free or Reduced-Price Lunch; ELL- English Language Learners; SPED - Special Ed.; McKinney-Vento - Homeless Assistance

Section

3

# Condition Assessment



# Condition Assessment

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## SYSTEMS DESCRIPTION

This section summarizes the building systems at Zach ES and describes the general condition observed based on the assessment. Specific findings and recommendations are detailed later in this report.

### Exterior Enclosure

The original two-story building was constructed in 2002. Exterior walls are primarily of brick, metal clapboard panel, CMU, and synthetic slate shingle construction. Windows are of the aluminum framed type, but include some metal clad operable wood windows. Exterior doors consist of hollow metal and storefront types. [REDACTED]

### Roofing

Original 2002 rolled asphalt roofing is present on the majority of the building. A smaller section of EPDM was installed in 2015. Metal flashing dates to 2002, and (8) solar tunnels date to 2015. The rolled asphalt roofing and metal flashing [REDACTED] are expected to have 2 years of remaining useful life.

### Interior Construction and Finishes

Almost all interior construction and finish assets date to the 2002 original construction. Vinyl tile flooring was installed in the Gym in 2023, and carpeting was replaced in 2015. Numerous acoustical tile ceiling panels were noted to be water damaged. Acoustical tile ceilings are expected to require replacement in 4 years, as is the VCT flooring in the remainder of the building.

### Conveyance

One passenger elevator is provided to serve the two floors of the building. Replace elevator in approximately 14 years.

### Electrical and Lighting

The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards, transformers, and the main switchboard date to 2002. The back-up generator is original, needing replacement within in 2 years. Emergency back-up lighting dates to 2002, as does the majority of the building's interior fluorescent lighting fixtures. Recommend replacement of the remaining fluorescent lighting fixtures with LED lighting fixtures in approximately 2 years. The Gym interior lighting was updated to LED fixtures in 2018. The fire alarm system and the security system date to 2016 and have 8 years of remaining life.

### HVAC Systems

HVAC assets include a 2023-built air-cooled chiller, (8) RTUs, duct coil heating units, exhaust fans, cabinet unit heaters, and (39) VAVs with Reheat Coils. The heating water system features two original gas-fired boilers with an estimated 14 years of remaining life. The two heating water pumps are original and [REDACTED] requiring replacement within 2 years. Five out of the six RTUs are expected to require replacement within 4 years, and the (39) VAVs are now three years past expected life with recommended replacement within 5 years. CLRTU-1 and CLRTU-2 (DX, serving Computer Labs) are [REDACTED] with 2 years of remaining life. The BAS was updated in 2012.

### Plumbing

Plumbing assets include one gas-fired water heater (a 502 MBH boiler original unit), backflow preventers, circulation pumps, and (3) original ice storage tanks associated with the ice storage cooling system. BFPs and the thermostatic mixing valve were replaced 2012-2017. Four storage tanks will require replacement within 4 years.

### Fire Suppression

The fire alarm system dates to 2016 and will need to be replaced in approximately 8 years. The wet fire sprinkler system dates to the 2002 original construction, and has 9 years of remaining life. The Fire Protection System appears to be well maintained and updated per fire code requirements. No deficiencies were noted with this system.

### Equipment

The Kitchen area is provided one walk-in coolers and one walk-in freezer with a single associated condensing unit. The walk-in units are original to the 2002 construction and are expected to require replacement in approximately 8 years. CU-Walk-In Freezer/Cooler is 6 years past expected life but was observed to have approximately 5 years of actual remaining life.



# Condition Assessment

## PRIORITIES

### SPECIFIC PRIORITIES

The top capital measures (up to five max) have been detailed in the following tables. Each measure receives a priority level of 1, 2, or 3. A priority level of 1 indicates that the measure is considered an immediate concern or a potential hazard and should be addressed as soon as possible. A priority level of 2 indicates that the measure is considered urgent, but not a potential hazard or there is a less severe impact to occupants. A priority level of 3 indicates that the assets associated with the measure are nearing end of life, but have not yet failed or have a mild to moderate impact on occupant safety and comfort.

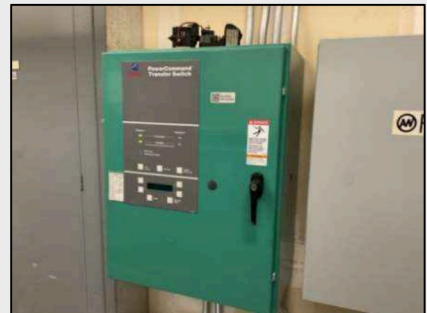
*Zach ES*

#### Replace Back-Up Generator & ATS-1

The back-up generator is original, needing replacement within in 2 years. 2002-built ATS-1 has approximately 4 years of remaining life, but is recommended to be replaced in tandem with the generator. The generator has total run hours of 370.2

The following assets are included within this measure:

FCAID-630044



<b>Priority Level:</b>	1
<b>Estimated Cost:</b>	\$51,270
<b>Remaining Life:</b>	1-2 Years

# Condition Assessment

## Replace Rolled Asphalt Roof & Metal Flashing

The 2002 rolled asphalt roofing and metal flashing [REDACTED] are expected to have 2 years of remaining useful life. Extensive bubbling and separation.

The following assets are included within this measure:

FCAID-630011, FCAID-630012



**Priority Level:** 2  
**Estimated Cost:** \$346,340  
**Remaining Life:** 2 Years

## Replace P-1, P-2, P-3, & P-4

P-1 and P-2 (3 Hp, serving Heating Water System) and P-3 and P-4 (5 Hp, serving Chilled Water System) are all 2002-built pumps. Though the motors of all 4 have recently been replaced, the pumps themselves are past expected life [REDACTED]

The following assets are included within this measure:

FCAID-630091, FCAID-630096, FCAID-630051, FCAID-630052



**Priority Level:** 2  
**Estimated Cost:** \$47,244  
**Remaining Life:** 2 Years

# Condition Assessment

## Replace CLRTU-1 & CLRTU-2

Serving the Computer Laboratory Rooms, these 2002-built RTUs [REDACTED] [REDACTED] are both 6 years past expected life. Recommend replacement within two years. HCFC-22 refrigerant.

The following assets are included within this measure:

FCAID-630100, FCAID-630101



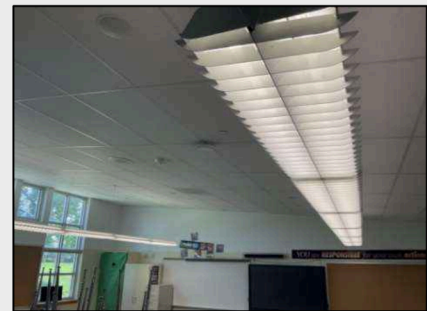
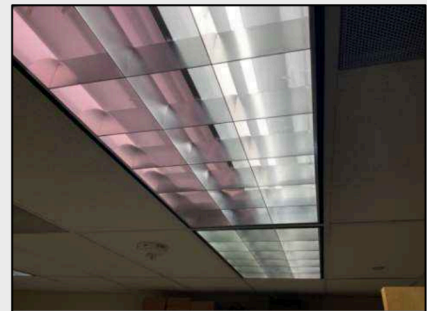
**Priority Level:** 2  
**Estimated Cost:** \$62,320  
**Remaining Life:** 2 Years

## Replace Interior Fluorescent Lighting

Recommend replacement of the original remaining fluorescent lighting fixtures with LED lighting fixtures in approximately 2 years. SF = 59,938

The following assets are included within this measure:

FCAID-630157



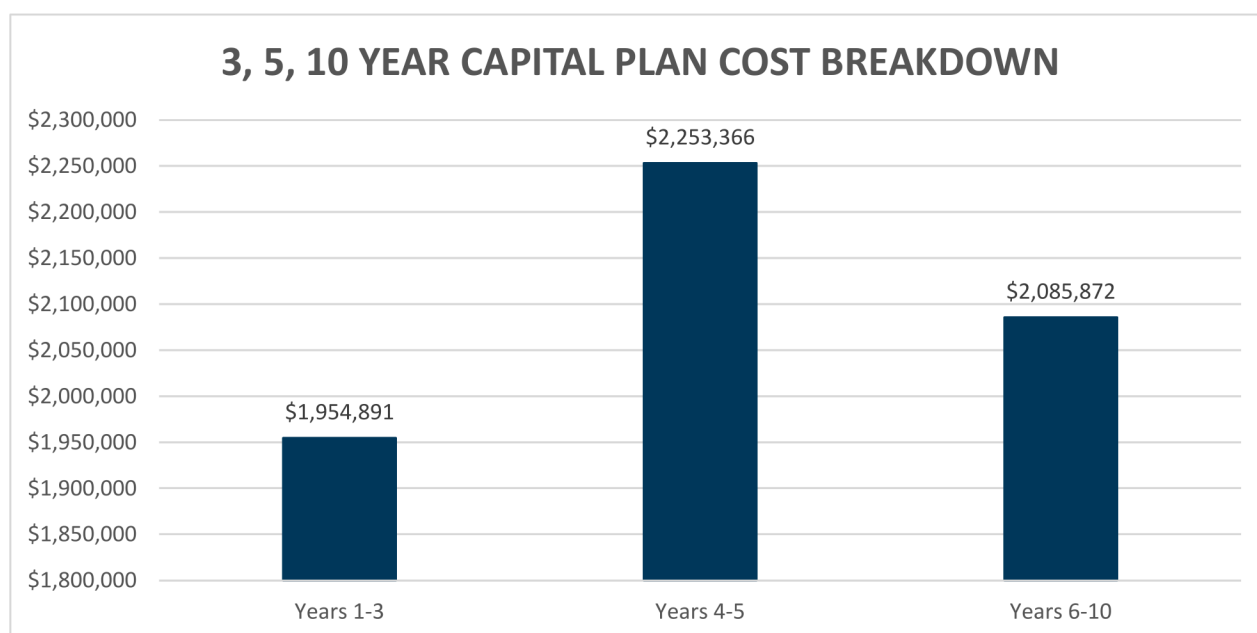
**Priority Level:** 2  
**Estimated Cost:** \$917,650  
**Remaining Life:** 2 Years

# Condition Assessment

## 3-, 5-, 10-YEAR PLANS

The following sections present the expected equipment replacement costs over the next ten years, broken into three separate plans. These plans are the 3-Year Plan, 5-Year Plan, and the 10-Year Plan. Each plan includes the equipment expected to fail during these periods, based on the observed condition of the equipment at the time of the assessment. Note, the 3-Year Plan includes assets failing within the next three years, the 5-Year Plan includes assets failing between four and five years, and the 10-Year Plan includes assets failing between in the next six to ten years from the assessment date.

**The chart below presents the total expected replacement costs for each plan. Note that these figures include 3% inflation YOY.**



## Future Capital Plan

The table below displays replacement costs for the campus, and the number of associated assets expected to fail within the next ten years. Assets requiring replacement or extensive maintenance in this plan are presented in Appendices A, B, and C.

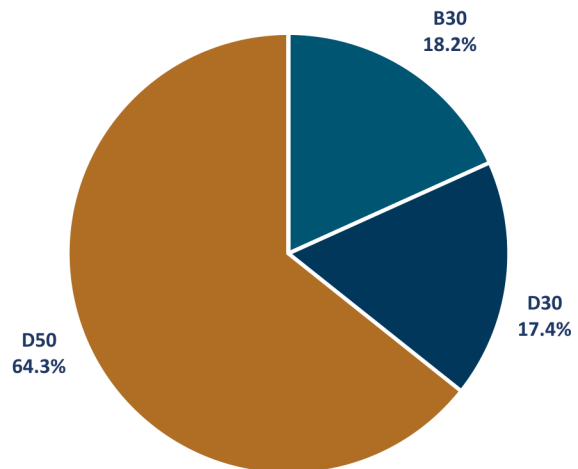
REPLACEMENT PERIOD	ASSET QUANTITY	CUMULATIVE REPLACEMENT COST
3-Year Plan	42	\$1,954,891
5-Year Plan	73	\$2,253,366
10-Year Plan	12	\$2,085,872
<b>Total</b>	<b>127</b>	<b>\$6,294,130</b>

# Condition Assessment

## 3-YEAR PLAN BREAKDOWN

The three-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 1-3, or between 2024 and 2026. The sum of the anticipated capital needs is \$1,954,891. The specific assets that will reach end of life in this period are listed in Appendix A.

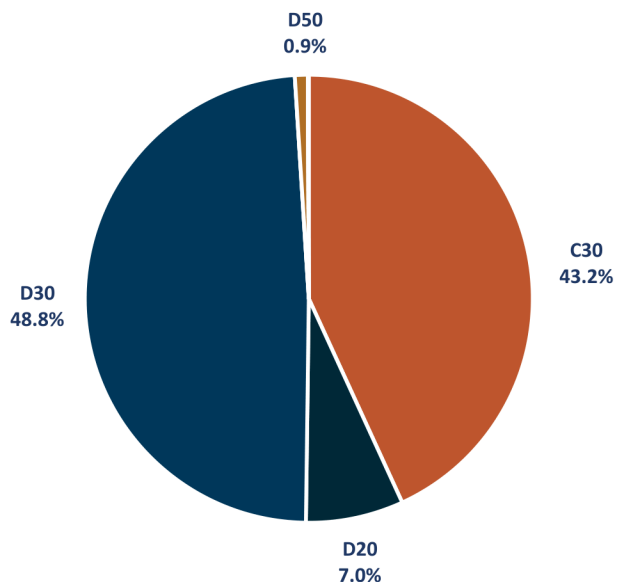
SUBSYSTEM	Years 1-3	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$0	0%
B30 - Roofing	\$356,730	18%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$0	0%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$0	0%
D30 - HVAC	\$341,062	17%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$1,257,099	64%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



## 5-YEAR PLAN BREAKDOWN

The five-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 4-5, or between 2027 and 2028. The sum of the anticipated capital needs is \$2,253,366. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 4-5	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$0	0%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$972,822	43%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$158,675	7%
D30 - HVAC	\$1,099,042	49%
D40 - Fire Protection	\$0	0%
D50 - Electrical	\$21,155	1%
E10 - Equipment	\$0	0%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$1,672	<1%

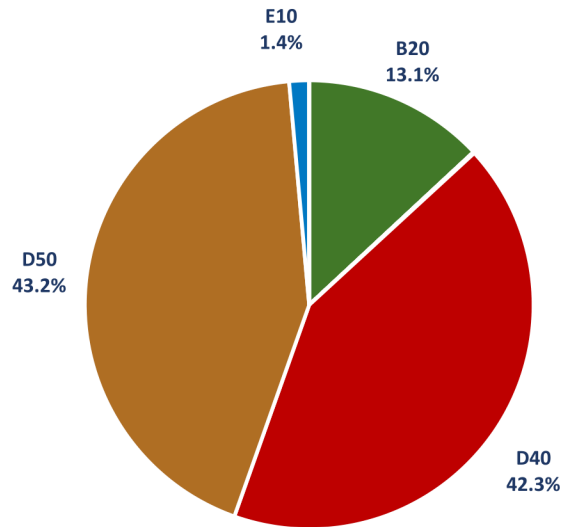


# Condition Assessment

## 10-YEAR PLAN BREAKDOWN

The ten-year plan includes the estimated capital expenditure needed to replace assets reaching end of life in years 6-10, or between 2029 and 2033. The sum of the anticipated capital needs is \$2,085,872. The specific assets that will reach end of life in this period are listed in Appendix A.

SUBSYSTEM	Years 6-10	Percent
A10 - Foundations	\$0	0%
B10 - Superstructure	\$0	0%
B20 - Exterior Enclosure	\$272,989	13%
B30 - Roofing	\$0	0%
C10 - Int. Construction	\$0	0%
C20 - Stairs	\$0	0%
C30 - Interior Finishes	\$0	0%
D10 - Conveying	\$0	0%
D20 - Plumbing	\$1,566	<1%
D30 - HVAC	\$0	0%
D40 - Fire Protection	\$881,545	42%
D50 - Electrical	\$900,108	43%
E10 - Equipment	\$29,665	1%
G20 - Site Improvements	\$0	0%
G40 - Site Electrical	\$0	0%



# Condition Assessment

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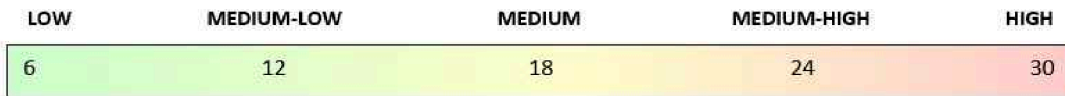
## PRIORITY SUMMARY

The summary below assigns a composite Overall Priority Score to the campus as of the assessment date. Priority Scores range from 6 (low priority) to 30 (high priority), and are based on asset condition, operating impact, student impact, energy impact, estimated replacement cost, and observed remaining life.

In addition to the Overall Priority Score, each Subsystem category within the site is assigned a Priority Score. This score can differentiate systems that may need more attention than others, due to condition or impact on occupants or operations. Each Subsystem category includes a general narrative section under the Description column.

## Future Capital Plan

The Subsystem scores are color coded to reflect the level of priority:  $\leq 12$  = Green, 12.1-23.9 = Yellow,  $\geq 24$  = Red. Higher priority scores indicate that a system should be considered for maintenance or capital improvements before other systems with lower scores. The rating scale for Priority Score is visualized below.



# Condition Assessment

## PRIORITY SCORE SUMMARY - ZACH ES

		<b>ZACH ES</b>
		<b>BUILDING TYPE:</b> Elementary School <b>YEAR BUILT:</b> 2002 <b>GROSS AREA (SF):</b> 63,092 <b>DATE ASSESSED:</b> June 14, 2023 <b>PRIORITY SCORE:</b> 16.7
SUBSYSTEM:	DESCRIPTION	PRIORITY SCORE
B20 - Ext. Enclosure	The original two-story building was constructed in 2002. Exterior walls are primarily of brick, metal clapboard panel, CMU, and synthetic slate shingle construction. Windows are of the aluminum framed type, but include some metal clad operable wood windows. Exterior doors consist of hollow metal and storefront types. [REDACTED]	<b>12.5</b>
B30 - Roofing	Original 2002 rolled asphalt roofing is present on the majority of the building. A smaller section of EPDM was installed in 2015. Metal flashing dates to 2002, and (8) solar tunnels date to 2015. The rolled asphalt roofing and metal flashing [REDACTED] are expected to have 2 years of remaining useful life.	<b>17.6</b>
C10 - Int. Construction	Almost all interior construction and finish assets date to the 2002 original construction. Vinyl tile flooring was installed in the Gym in 2023, and carpeting was replaced in 2015. [REDACTED]	<b>13.1</b>
C30 - Interior Finishes	[REDACTED] Acoustical tile ceilings are expected to require replacement in 4 years, as is the VCT flooring in the remainder of the building.	<b>15.3</b>
D20 - Plumbing	Plumbing assets include one gas-fired water heater (a 502 MBH boiler original unit), backflow preventers, circulation pumps, and (3) original ice storage tanks associated with the ice storage cooling system. BFPs and the thermostatic mixing valve were replaced 2012-2017. Four storage tanks will require replacement within 4 years.	<b>12.4</b>
D30 - HVAC	HVAC assets include a 2023-built air-cooled chiller, (8) RTUs, duct coil heating units, exhaust fans, cabinet unit heaters, and (39) VAVs with Reheat Coils. The heating water system features two original gas-fired boilers with an estimated 14 years of remaining life. The two heating water pumps are original [REDACTED] requiring replacement within 2 years. Five out of the six RTUs are expected to require replacement within 4 years, and the (39) VAVs are now three years past expected life with recommended replacement within 5 years. CLRTU-1 and CLRTU-2 (DX, serving Computer Labs) are [REDACTED] with 2 years of remaining life. The BAS was updated in 2012.	<b>16.3</b>
D40 - Fire Suppression	The fire alarm system dates to 2016 and will need to be replaced in approximately 8 years. The wet fire sprinkler system dates to the 2002 original construction, and has 9 years of remaining life. The Fire Protection System appears to be well maintained and updated per fire code requirements. No deficiencies were noted with this system.	<b>21.0</b>
D50 - Electrical	The building includes both 120/208V and 277/480V service. Electrical assets, including panelboards, transformers, and the main switchboard date to 2002. The back-up generator is original, needing replacement within 2 years. Emergency back-up lighting dates to 2002, as does the majority of the building's interior fluorescent lighting fixtures. Recommend replacement of the remaining fluorescent lighting fixtures with LED lighting fixtures in approximately 2 years. The Gym interior lighting was updated to LED fixtures in 2018. The fire alarm system and the security system date to 2016 and have 8 years of remaining life.	<b>22.9</b>
E10 - Equipment	The Kitchen area is provided one walk-in coolers and one walk-in freezer with a single associated condensing unit. The walk-in units are original to the 2002 construction and are expected to require replacement in approximately 8 years. CU-Walk-In Freezer/Cooler is 6 years past expected life but was observed to have approximately 5 years of actual remaining life.	<b>14.0</b>

System priority scored from 6 (lowest priority) to 30 (highest priority) based on condition, operating impact, student/teacher impact, energy impact, estimated replacement cost, and observed remaining life. [≤12 = green, 12-24 = yellow, ≥24 = red]



Appendices

- A. 3-YEAR PLAN ASSETS LIST
- B. 5-YEAR PLAN ASSETS LIST
- C.10-YEAR PLAN ASSETS LIST

# Appendix A

## APPENDIX A: 3-YEAR PLAN ASSETS LIST

The individual assets associated with the 3-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### ZACH ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING	REPLACEMENT COST	PRIORITY SCORE
FCAID-630157	Interior Lighting: Fluorescent	D50 - Electrical	2	\$917,650	27
FCAID-630156	Emergency Back-Up Lighting	D50 - Electrical	2	\$240,380	27
FCAID-630100	CLRTU-1	D30 - HVAC	2	\$31,160	20
FCAID-630101	CLRTU-2	D30 - HVAC	2	\$31,160	20
FCAID-630012	Roofing: Rolled Asphalt	B30 - Roofing	2	\$318,250	20
FCAID-630108	SF-1	D30 - HVAC	1	\$8,190	19
FCAID-630044	Back-Up Generator	D50 - Electrical	2	\$51,270	19
FCAID-630051	P-3	D30 - HVAC	2	\$11,900	17
FCAID-630052	P-4	D30 - HVAC	2	\$11,900	17
FCAID-630154	Exterior Lighting: Wall Packs, Incandescent	D50 - Electrical	1	\$11,520	17
FCAID-630096	P-2	D30 - HVAC	2	\$11,720	17
FCAID-630011	Roofing: Metal Flashing	B30 - Roofing	2	\$28,090	17
FCAID-630091	P-1	D30 - HVAC	2	\$11,720	17
FCAID-630072	EF-6	D30 - HVAC	1	\$6,710	17
FCAID-630060	DHC-201	D30 - HVAC	3	\$10,120	15
FCAID-630058	DHC-104	D30 - HVAC	3	\$10,120	15
FCAID-630062	DHC-203	D30 - HVAC	3	\$10,120	15
FCAID-630055	DHC-101	D30 - HVAC	3	\$8,280	15
FCAID-630059	DHC-105	D30 - HVAC	3	\$5,520	15
FCAID-630063	DHC-204	D30 - HVAC	3	\$5,520	15
FCAID-630061	DHC-202	D30 - HVAC	3	\$10,120	15
FCAID-630056	DHC-102	D30 - HVAC	3	\$8,280	15
FCAID-630057	DHC-103	D30 - HVAC	3	\$8,280	15
FCAID-630064	DHC-205	D30 - HVAC	3	\$5,520	15
FCAID-630069	EF-3	D30 - HVAC	3	\$6,710	14
FCAID-630071	EF-5	D30 - HVAC	3	\$12,980	14

FCAID-630070	EF-4	D30 - HVAC	3	\$8,190	14
FCAID-630068	EF-2	D30 - HVAC	3	\$6,710	14
FCAID-630073	EF-7	D30 - HVAC	3	\$8,660	14
FCAID-630074	EF-8	D30 - HVAC	3	\$8,660	14
FCAID-630075	EF-9	D30 - HVAC	3	\$8,190	14
FCAID-630082	RH-201	D30 - HVAC	3	\$5,450	13
FCAID-630081	RH-106	D30 - HVAC	3	\$5,450	13
FCAID-630080	RH-105	D30 - HVAC	3	\$5,450	13
FCAID-630076	RH-101	D30 - HVAC	3	\$5,450	13
FCAID-630065	EF-1	D30 - HVAC	3	\$6,710	13
FCAID-630090	Gas Meter	D30 - HVAC	2	\$3,430	13
FCAID-630078	RH-103	D30 - HVAC	3	\$5,450	13
FCAID-630077	RH-102	D30 - HVAC	3	\$5,450	13
FCAID-630083	RH-202	D30 - HVAC	3	\$5,450	13
FCAID-630084	RH-203	D30 - HVAC	3	\$5,450	13
FCAID-630079	RH-104	D30 - HVAC	3	\$5,450	13

# Appendix B

## APPENDIX B: 5-YEAR PLAN ASSETS LIST

The individual assets associated with the 5-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### ZACH ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-630106	RTU-5	D30 - HVAC	4	\$176,330	21
FCAID-630102	RTU-1	D30 - HVAC	4	\$189,840	21
FCAID-630105	RTU-4	D30 - HVAC	4	\$127,980	20
FCAID-630103	RTU-2	D30 - HVAC	4	\$81,050	19
FCAID-630104	RTU-3	D30 - HVAC	4	\$85,320	19
FCAID-630023	Interior Flooring: Carpet	C30 - Int. Finishes	4	\$799,590	17
FCAID-630099	CNV2	D30 - HVAC	4	\$2,860	17
FCAID-630098	CNV1	D30 - HVAC	4	\$2,860	16
FCAID-630054	CU-Walk-In Freezer/Cooler	D30 - HVAC	5	\$20,110	15
FCAID-630159	Lighting Control Panel - Electrical 232-1	D50 - Electrical	4	\$2,510	14
FCAID-630161	Lighting Control Panel - Gym	D50 - Electrical	4	\$2,510	14
FCAID-630160	Lighting Control Panel - Electrical 232-2	D50 - Electrical	4	\$2,510	14
FCAID-630162	Lighting Control Panel - Media	D50 - Electrical	4	\$2,510	14
FCAID-630024	Interior Flooring: Ceramic Tile	C30 - Int. Finishes	4	\$39,450	14
FCAID-630163	Lighting Control Panel - North Classrooms	D50 - Electrical	4	\$2,510	14
FCAID-630164	Lighting Control Panel - South Classrooms	D50 - Electrical	4	\$2,510	14
FCAID-630151	ATS-1	D50 - Electrical	4	\$4,300	13
FCAID-630050	CUH-5	D30 - HVAC	5	\$6,610	13
FCAID-630034	Ice Storage Tank-1	D20 - Plumbing	4	\$43,040	13
FCAID-630046	CUH-1	D30 - HVAC	5	\$6,610	13
FCAID-630035	Ice Storage Tank-2	D20 - Plumbing	4	\$43,040	13
FCAID-630047	CUH-2	D30 - HVAC	5	\$6,610	13
FCAID-630025	Interior Flooring: 2002 VCT Tile	C30 - Int. Finishes	4	\$51,230	13
FCAID-630048	CUH-3	D30 - HVAC	5	\$6,610	13
FCAID-630049	CUH-4	D30 - HVAC	5	\$6,610	13

FCAID-630036	Ice Storage Tank-3	D20 - Plumbing	4	\$43,040	13
FCAID-630147	VAV-05-216	D30 - HVAC	5	\$5,640	12
FCAID-630139	VAV-05-124	D30 - HVAC	5	\$7,270	12
FCAID-630135	VAV-05-120	D30 - HVAC	5	\$5,640	12
FCAID-630116	VAV-01-108	D30 - HVAC	5	\$5,640	12
FCAID-630143	VAV-05-212	D30 - HVAC	5	\$5,640	12
FCAID-630117	VAV-01-109	D30 - HVAC	5	\$5,640	12
FCAID-630113	VAV-01-103	D30 - HVAC	5	\$5,640	12
FCAID-630118	VAV-01-110	D30 - HVAC	5	\$5,640	12
FCAID-630137	VAV-05-122	D30 - HVAC	5	\$5,640	12
FCAID-630119	VAV-01-111	D30 - HVAC	5	\$5,640	12
FCAID-630141	VAV-05-126	D30 - HVAC	5	\$7,270	12
FCAID-630109	GFUH-1	D30 - HVAC	5	\$4,520	12
FCAID-630145	VAV-05-214	D30 - HVAC	5	\$5,640	12
FCAID-630110	UH-1	D30 - HVAC	5	\$3,520	12
FCAID-630149	VAV-06-106	D30 - HVAC	5	\$7,270	12
FCAID-630123	VAV-01-204	D30 - HVAC	5	\$5,640	12
FCAID-630115	VAV-01-107	D30 - HVAC	5	\$5,640	12
FCAID-630124	VAV-01-205	D30 - HVAC	5	\$5,640	12
FCAID-630136	VAV-05-121	D30 - HVAC	5	\$5,640	12
FCAID-630125	VAV-04-112	D30 - HVAC	5	\$5,640	12
FCAID-630138	VAV-05-123	D30 - HVAC	5	\$4,700	12
FCAID-630126	VAV-04-113	D30 - HVAC	5	\$5,640	12
FCAID-630140	VAV-05-125	D30 - HVAC	5	\$7,270	12
FCAID-630127	VAV-04-114	D30 - HVAC	5	\$5,640	12
FCAID-630142	VAV-05-127	D30 - HVAC	5	\$5,640	12
FCAID-630128	VAV-04-115	D30 - HVAC	5	\$8,900	12
FCAID-630144	VAV-05-213	D30 - HVAC	5	\$5,640	12
FCAID-630111	VAV-01-101	D30 - HVAC	5	\$7,270	12
FCAID-630146	VAV-05-215	D30 - HVAC	5	\$5,640	12
FCAID-630037	ST-1	D20 - Plumbing	4	\$16,090	12
FCAID-630148	VAV-06-105	D30 - HVAC	5	\$5,640	12
FCAID-630131	VAV-04-208	D30 - HVAC	5	\$4,700	12
FCAID-630112	VAV-01-102	D30 - HVAC	5	\$5,640	12
FCAID-630132	VAV-04-209	D30 - HVAC	5	\$5,640	12
FCAID-630114	VAV-01-104	D30 - HVAC	5	\$7,270	12
FCAID-630133	VAV-04-210	D30 - HVAC	5	\$5,640	12
FCAID-630134	VAV-05-119	D30 - HVAC	5	\$5,640	12
FCAID-630129	VAV-04-117	D30 - HVAC	5	\$7,270	12
FCAID-630130	VAV-04-118	D30 - HVAC	5	\$5,640	12
FCAID-630122	VAV-01-203	D30 - HVAC	5	\$5,640	12
FCAID-630121	VAV-01-202	D30 - HVAC	5	\$5,640	12
FCAID-630153	Electric Meter - MDC	G40 - Site Electric	4	\$1,530	11
FCAID-630085	ET-1	D30 - HVAC	5	\$7,230	10
FCAID-630043	AS-2	D30 - HVAC	5	\$11,310	10
FCAID-630086	ET-2	D30 - HVAC	5	\$9,630	10
FCAID-630042	AS-1	D30 - HVAC	5	\$7,530	10

FCAID-630120	VAV-01-112	D30 - HVAC	5	\$5,640	8
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# Appendix C

## APPENDIX C: 10-YEAR PLAN ASSETS LIST

The individual assets associated with the 10-Year Plan are shown below, sorted from highest to lowest priority score. The priority score key is shown below for convenience.

Note that these values represent current replacement costs expressed in 2023 dollar amounts and are not adjusted for inflation.

LOW	MEDIUM-LOW	MEDIUM	MEDIUM-HIGH	HIGH
6	12	18	24	30

The asset ID listed for each entry has been assigned during this assessment and reflects the corresponding asset in the FCA workbook.

### ZACH ES

ASSET ID	DESCRIPTION	SUBSYSTEM	OBSERVED REMAINING LIFE	REPLACEMENT COST	PRIORITY SCORE
FCAID-630155	Fire Alarm System	D50 - Electrical	8	\$491,490	21
FCAID-630150	Wet Fire Sprinkler System	D40 - Fire Prot.	9	\$695,900	21
FCAID-630181	Security System	D50 - Electrical	8	\$240,380	19
FCAID-630191	Walk-in Freezer	E10 - Equipment	8	\$12,060	14
FCAID-630190	Walk-in Cooler	E10 - Equipment	8	\$12,060	14
FCAID-630007	Exterior Doors: Hollow Metal, Single	B20 - Ext. Enclosure	9	\$39,680	12
FCAID-630006	Exterior Doors: Hollow Metal, Double	B20 - Ext. Enclosure	9	\$69,440	12
FCAID-630008	Exterior Windows: Aluminum Framed	B20 - Ext. Enclosure	9	\$13,820	12
FCAID-630009	Exterior Windows: Aluminum/Wood, Oper	B20 - Ext. Enclosure	9	\$13,200	12
FCAID-630003	Exterior Doors: Storefront, Double	B20 - Ext. Enclosure	9	\$79,360	12
FCAID-630029	BFP-2-DCW	D20 - Plumbing	10	\$400	9
FCAID-630028	BFP-1-DCW-Main	D20 - Plumbing	10	\$800	9